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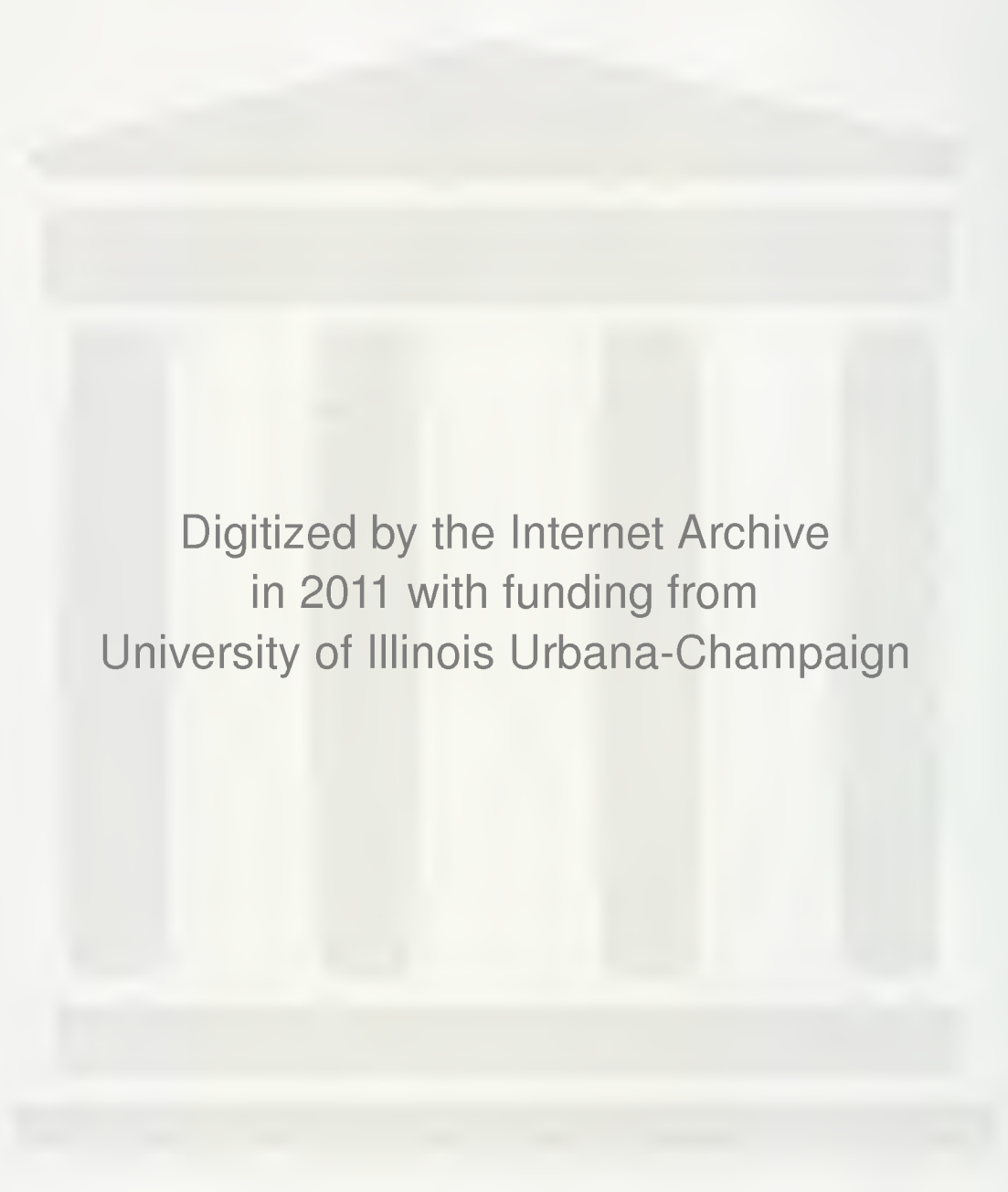
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ASSET ACCUMULATION IN EARLY MARRIED LIFE*

#403

College of Commerce and Business Administration
University of Illinois at Urbana-Champaign

ASSET ACCUMULATION IN EARLY MARRIED LIFE*

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Lucy Chao Lee and Robert Ferber

*This paper was prepared as part of the work under Grant
SOC74-23458 of the National Science Foundation.

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June 1, 1977

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CHAPTER 10

The first part of the chapter is devoted to the study of the properties of the function $f(x) = \sin x$. The second part is devoted to the study of the properties of the function $f(x) = \cos x$.

10.1. The sine function

The sine function is defined as the vertical coordinate of the point on the unit circle.

The sine function is periodic with period 2π .

□

Abstract

This study investigates the extent to which asset accumulation by young married couples in early married life can be explained by financial, other economic and attitudinal variables. It finds, among other things, that at least for this sample, those who started out better off kept getting still better off financially, and that going into debt was a major correlate of later financial well being.

Asset Accumulation in Early Married Life

I. Introduction

What influences the accumulation of financial assets by young married couples? Do couples that start out with more assets tend to maintain this lead over time? Do couples that borrow tend to be better or worse off financially than those who do not? To what extent can asset accumulation be explained in terms of some of the current concepts of consumer economics?

Questions such as these are considered in this study. They are explored by making use of asset and other information collected from a sample of young couples married in the summer of 1968 in the cities of Peoria and Decatur, Illinois, and interviewed approximately every six months since that time. The data used in this study relate to the first five years of marriage.

Based on these data, this paper explores a number of questions relating to the determinants of asset position. One such question is whether a concept of permanent, or normal, income provides a more effective explanation of asset accumulation than current income. This would seem a logical hypothesis since most asset accumulation is made with long run objectives in mind, so that some more permanent concept than observed income should be more relevant.

A second question is the effect of debt on asset accumulation. Although this question has not been explored much in the earlier research, it is a frequent item of discussion, namely, whether couples that incur large amounts of debt are more likely to improve their asset position (particularly net assets) than couples with smaller amounts of debts.

A third question relates to the effect of initial asset holdings on later asset accumulation. Is it true, for example, that the "rich get richer" from the very start of the marriage?

A fourth question is the extent to which variables other than socioeconomic help explain variations in savings. To what extent, for example, do attitudinal variables help in this regard? What about other variables that may reflect asset accumulation tendencies? Two such types of variables are available for this study, namely, attitudes toward savings (including plans if any for saving), and measures of ownership of credit cards and of durable goods.

In the case of socioeconomic characteristics, does it make any difference in explaining savings behavior whether one uses the characteristics of the wife or the husband? This question rarely arises in other studies partly because the family unit is assumed to be homogenous in most economic theory and partly because usually only one set of data is available anyway (invariably for the husband). In this study, however, information on such key characteristics as occupation and education are available for both members of the couple. In addition, a set of questions was asked that led to a classification of one or both members of the couple as the "family financial officer." This raises interesting possibilities for exploratory work, which will be discussed later.

These questions will be studied with regard to both gross and net assets for two time periods--the first year and the fifth years after marriage, the periods for which financial data are available.

As a basis for specification of alternative models, we begin by reviewing some of the previous work in this subject area. The data set and its characteristics are described in Section III. The presentation of the general analytical approach, in Section IV, is followed by the results in Section V. A concluding section reviews and discusses the implications of the findings.

II. Earlier Studies

Until recent years, the principal attention given to consumer assets in the economics literature was to their role as an independent variable, partly as an input into the investment stream and partly as a determinant of consumption and saving behavior. The general tendency in the classical literature has been to treat consumer assets as an exogenous variable, determined by savings accumulations over many past periods and, hence, as a given quantity in explaining some aspect of consumer spending or saving behavior in the current period. The principal exceptions seem to have been Irving Fisher's treatise investigating, in part, the influence of interest rates on asset accumulation,* and discussions such as those by Keynes on the reasons for holding particular types of assets.

It is only in the last 20 or 30 years that much attention has been given to seeking to explain the level and composition of consumer asset holdings,

*Fisher, I., The Nature of Capital and Income. New York: The Macmillan Company, 1960.

partly perhaps because of the increasing amounts of such assets and partly (and not unrelatedly) because of the increasing amount of data available on the subject. Even so, empirical treatment of the determinants of total asset holdings or of net worth are few and far between, and models of the asset accumulation process in the early stages of the life cycle seem to be nonexistent. Indeed, on a cross-section basis, which is of primary relevance to the present study, only two such studies can be cited, both based on the 1962-63 Federal Reserve Survey of Family Financial Holdings and focusing on determinants of net worth. Thus, both Crockett and Friend,* and Projector and Weiss,** found that income, age and various other socioeconomic variables affected net worth holdings and that the long-run normal income elasticity of net worth tends to exceed unity.

A number of other studies have focused on individual assets and still others on determinants of assets divided into general categories. These latter studies could be construed as attempting to explain gross asset holdings insofar as the individual categories sum to a meaningful total, and it would therefore seem useful to summarize briefly the principal such studies.

By running regressions with a different asset holding as dependent in each case, Watts and Tobin, using the data from the 1950 BLS Consumer Expenditures Study, concluded that "households tend to maintain some sort of balance in their capital accounts both between assets yielding direct service and

*Crockett, J., and Friend, I., "Consumer Investment Behavior." In Ferber, R., ed., Determinants of Investment Behavior. New York: National Bureau of Economic Research, 1967, pp. 15-127.

**Projector, D.S., and Weiss, G.S., Survey of Financial Characteristics of Consumers. Washington, D.C.: Federal Reserve Board, 1966.

financial assets, and between liquid funds and liabilities."* They, as well as Guthrie at a later time,** found that as households moved up the economic scale, more of all kinds of assets were acquired and debts were reduced.

This absence of substitution among assets was also observed in a study involving pension contributions by Cagan*** and in a study of a different set of data by Henry Claycamp.# Based on that study, Claycamp propounded a so-called "independence hypothesis," that "the aggregate distribution of assets... approximates that which would be found if the ownership of assets were independent."##

Studying the demand separately by ordinary least squares for four assets (marketable bonds, life insurance reserves, time deposits in commercial banks and time deposits in other institutions), Hamburger found interest rates and total wealth to be highly significant, income to have negligible effect and some of the assets to be close substitutes for each other.### The latter finding was also obtained by Darby.####

*Watts, H.W. and Tobin, J., "Consumer Expenditures and the Capital Account." In Friend, I., and Jones, R., Eds. Proceedings of the Conference on Consumption and Saving, Vol. 2. Philadelphia: University of Pennsylvania, 1960, p. 48.

**Guthrie, H.W., "Consumers' Propensities to Hold Liquid Assets," Journal of the American Statistical Association, Vol. 55 (Sept. 1960), pp. 469-90.

***Cagan, Philip, Pension Plans and Aggregate Saving. New York: National Bureau of Economic Research, 19 .

#Claycamp, H.J., The Composition of Consumer Savings Portfolios. Urbana, Ill.: University of Illinois, Bureau of Economic and Business Research, Studies in Consumer Savings, No. 3, 1963.

##Ibid, p. 54.

###Hamburger, M.J., "Household Demand for Financial Assets," Econometrica, Vol. 36 (Jan. 1968), pp. 97-118.

####Darby, M.R., "The Allocation of Transitory Income Among Consumers' Assets," American Economic Review, Vol. 62 (Dec. 1972), pp. 928-41.

Broader models of asset-demand functions derived from utility theory have been studied by Motley and Wachtel. Motley found, like Hamburger, considerable interdependence among assets, and with both permanent income and transitory income affecting asset holdings.* Wachtel used four categories of assets also, but two of these (durables, and consumption excluding durables) were not financial assets. Using a partial adjustment approach, he finds that transitory income more than permanent income influences these asset holdings in addition to the lagged effects of the holdings themselves.**

Summing up this section, this past work would seem to suggest that a large number of cross-section variables are likely to affect total asset holdings, at least one of which is likely to be some concept of permanent or normal income.

III. Descriptive Aspects

The data used in this study are from a panel of couples married in the summer of 1968 in the cities of Peoria and Decatur, Illinois. The husband had to be 30 years of age or less at that time and involved only first marriages. These couples were interviewed approximately every six months since the fall of 1968, and a sizable amount of data were collected relating to their money management and financial behavior. More specific to the purposes of this study, a complete financial portfolio was obtained in the third interview, when the couple had been married approximately one year, and another complete portfolio four years later. The analytical focus of the study is, therefore, on the characteristics and determinants

*Motley, B., "Household Demand for Assets: A Model of Short-run Adjustments," Review of Economics and Statistics, Vol. 52 (Aug. 1970), pp. 236-41.

**Wachtel, P., "A Model of Interrelated Demand for Assets by Households," Annals of Economic and Social Measurement, Vol. 1 (April 1972), pp. 129-40.

of financial asset holdings as of the end of the first and fifth years of marriage.

It is unfortunate that financial portfolios were not obtained as of the time of marriage. From a survey point of view, however, it was felt that such an attempt would be too damaging to the cooperativeness of the panel members in view of the highly sensitive nature of this information. The response rates obtained were quite good: approximately 72 percent of the initial 313 couples were still in the panel after five years, which provides a better base for analysis.

The other data used in this analysis refer to various characteristics and attitudes of both members of the couple. In most instances, these data were obtained for each member separately. The specific variables used are best described in the later sections.* Here, we examine the characteristics of the asset holdings and how they have changed over this period.

A general picture of the distribution of the couples by their total financial holdings is provided in Table 1 for three main quantities, namely, gross assets, total debts and net assets. Not surprisingly, the table shows that in terms of gross assets most couples had relatively little at the end of the first year of marriage (1969). More than half of the couples had less than \$5,000 in gross assets and an even larger proportion had debts amounting to this much. As a result, nearly half of the couples had net assets that were either negative or negligible. Only 10% of the couples had gross assets of \$25,000 or more, but hardly any had net assets this large.

*A more complete description of these data is available in a brochure obtainable from the Survey Research Laboratory, University of Illinois, Urbana, Illinois 61801.

1. Percent Distribution of Families by Overall Financial Holdings,
One Year and Five Years After Marriage

<u>Amount</u>	<u>Years after marriage</u>	
	<u>One</u>	<u>Five</u>
<u>Gross Assets</u>		
0-\$ 999	22.5%	12.6%
\$1,000- 4,999	28.9	13.7
5,000- 14,999	18.5	36.1
15,000- 24,999	19.7	16.9
25,000 or more	<u>10.4</u>	<u>20.8</u>
Total	100.0%	100.1%
<u>Total Debts</u>		
0-\$ 999	29.4%	10.9%
\$1,000- 4,999	28.8	7.3
5,000- 14,999	22.0	24.4
15,000- 24,999	19.8	36.8
25,000 or more	<u>0</u>	<u>20.7</u>
Total	100.0%	100.1%
<u>Net Assets</u>		
-\$10,000 or less	0%	25.1%
-1,000- -9,999	18.6	22.4
999- -999	29.7	13.7
1,000- 4,999	30.2	15.8
5,000- 14,999	16.9	14.8
15,000 or more	<u>4.7</u>	<u>8.2</u>
Total	107.1%	100.0%

note: Base in all cases is between 170 and 193 families.

Five years later, the situation had changed drastically. In terms of gross assets, the distribution had shifted sharply to the right. The proportion having gross assets under \$5,000 had declined from over half to just about one-quarter, while the proportion having gross assets of \$25,000 or more had doubled, to 21%. An even more pronounced shift to the right took place in the debt position of the couples. Those having debts under \$5,000 declined from nearly 60% to 18%, while those having debts of \$15,000 or more tripled, from barely 20% to nearly 60%.

As a result, the effect on the net asset position was to flatten the distribution markedly, with more couples having both less assets and more assets. Thus, whereas no couples were in the red in terms of net assets to the extent of \$10,000 or more after one year of marriage, one-fourth of the couples were in this rather precarious position after five years of marriage. On the other hand, the proportion of couples having net assets of \$15,000 or more had increased from 5% to slightly over 8%, and couples in the negligible net asset position had dwindled from 30% to 14%.

It is of some interest to note that, on the basis of a more disaggregative analysis, the only assets fairly common among these couples at the start of the marriage were checking accounts, savings accounts in banks, life insurance and a home; the frequency of the latter is not too surprising in view of the relative scarcity of apartments in these two smaller-sized cities. On the debt side, nearly 60% had a loan on a car; almost that many owed something on other personal property; and nearly 40% had a home mortgage. The frequency of ownership of these assets changed little over the five year period, the principal characteristic being an increase in the frequency

of ownership of a home and of common and preferred stock. Particularly relevant for the later models is the fact that home owners had much more (gross) assets and debts than non-homeowners, as might be expected.

Overall, the total assets of these couples increased substantially during these five years. However, the same was true of their debts, with the result that their net asset position improved in some instances but worsened in others. As a rule, the couples that were in the best financial position at the start of marriage maintained that position, and correspondingly for those that were less well off. This is brought out in Table 2, which compares changes in total assets and in net assets between these two periods. As is evident from this table, of those who had less than \$1,000 of total assets after the first year of marriage, 35% were in the same category after five years and another 25% had moved only into the next higher category. In contrast, of those with over \$25,000 worth of total assets after the first year of marriage, 56% had this much assets after five years and all of them had assets of at least \$5,000 at that time.

A similar relationship is evident from the second part of Table 2 which relates to net assets. Thus, of those having significant negative amounts of net assets (in the red by more than \$1,000), nearly two-thirds were in the same position after five years, whereas this was true of only 14% of those having net assets of over \$15,000 after the first year of marriage. At the same time, of those having over \$15,000 worth of net assets after the first year, nearly 30% were in the same position five years later and an equal percentage had between \$5,000 and \$15,000 in net assets.

2. Percent Distribution of Families by Assets in Year 5
for Given Level of Assets in Year 1

A. Gross Assets

Amount in Year 5	Amount in Year 1				
	0- \$1,000	\$1,001- 5,000	\$5,001- 15,000	\$15,001- 25,000	\$25,001 or more
0-\$1,000	35.0%	6.8%	3.2%	8.8%	0.0%
1,001-5,000	25.0	13.6	9.7	5.9	0.0
5,001-15,000	27.5	45.5	45.2	38.2	18.8
15,001-25,000	10.0	20.5	9.7	23.5	25.0
25,001 or more	<u>2.5</u>	<u>13.6</u>	<u>32.3</u>	<u>23.5</u>	<u>56.3</u>
Total	100.0%	100.0%	100.1%	99.9%	100.1%
Base	40	44	31	34	16

B. Net Assets

Amount in Year 5	Amount in Year 1				
	-\$1,001- -10,000	-\$1,000- -1,000	\$1,001- 5,000	\$5,001- 15,000	\$15,001 or more
-\$20,000 or less	3.6%	5.8%	14.0%	0.0%	0.0%
-\$10,001 to \$20,000	32.1	21.2	8.0	11.1	14.3
-\$1,001 to -10,000	28.6	28.8	16.0	14.8	0.0
\$1,000 to -1,000	17.9	15.4	18.0	11.1	14.3
\$1,001 to 5,000	3.6	11.5	22.0	29.6	14.3
\$5,001 to 15,000	14.3	15.4	12.0	11.1	28.6
\$15,001 or more	<u>0.0</u>	<u>1.9</u>	<u>10.0</u>	<u>22.2</u>	<u>28.6</u>
Total	100.1%	100.0%	100.0%	99.9%	100.1%
Base	28	52	50	27	7

IV. Analytical Approach

As noted in the preceding section, total assets can be represented in either gross or net terms. The simple correlation between gross assets and net assets was in Year 1 and in Year 5. Still, the two terms are by no means equivalent, and there is no question that net assets is a better measure of financial position than gross assets. Hence our focus is primarily on testing the ability of various hypotheses to help explain fluctuations in net assets. At the same time, there is also considerable interest in the extent to which different hypotheses help explain variations in gross assets and in debt, partly because these are of key interest in themselves and partly because a more meaningful explanation of fluctuations in net assets may well be obtained through first explaining fluctuations in these other two variables. For this reason, we adopt a twin approach of seeking to explain net assets on the one hand as the difference between separate functions for gross assets and for debts and, on the other hand, directly by expressing net assets as a function of alternative hypothesized relevant variables.

By the indirect approach, we have a set of three equations, one an identity expressing net assets (NA) as the difference between gross assets (GA) and debts (DT), and two behavioral equations, one for GA and one for DT. By the direct approach, we have a single behavioral equation for NA.

For the explanatory variables, in addition to the three dependent variables which may influence each other (not to mention lag effects), we have the following four sets of variables:

1. A measure of family income which may be reported income for the particular year (Y), or a measure of long run, or "normal" income (Y_n).
2. A set of socioeconomic characteristics (SE) which includes the age, occupation and education of the husband and wife separately, as well as a variable identifying the "family financial officer."*
3. A set of variables reflecting the budget plans of the family and the priority accorded to savings (AT). The two key variables are attitude toward savings and presence of a plan for purchasing goods and making other expenditures.
4. A set of variables reflecting ownership of a home (H) and ownership of various other financial instruments (OF). These include purchase of durable goods, number of major durables owned, and number of credit cards owned.

Going back to the studies reviewed earlier and to the overall review in the preceding sections, the following two general models are formulated to explain fluctuations in net assets. For the indirect approach, we have:

$$(1.1) \quad NA = GA - DT$$

$$(1.2) \quad GA = f(Y, DT, SE, AT, OF)$$

$$(1.3) \quad DT = f(Y, H, SE, AT, OF)$$

*Such identification was made on the basis of answers obtained to three questions relating to who paid the bills, who looked after excess funds and who made decisions on major purchases. On the basis of these answers it was found feasible to identify the family financial officer as the husband, wife or both, separately in Year 1 and in Year 5.

In other words, we test all four sets of explanatory variables in both the GA and DT equations. In addition, since debts enter to a large extent in the formation of gross assets, that variable is used as explanatory in Equation 1.2. At the same time, since the preceding section brings out that most of the debt of these couples is related to the acquisition of a home, ownership of a home is included as a dichotomous explanatory variable in Equation 1.3.

For the direct estimation of NA, two forms are used, namely:

$$(2) \quad NA = f(Y, GA, SE, AT, OF)$$

$$(3) \quad NA = f(Y, D, SE, AT, OF)$$

Once again, the four sets of explanatory variables are included in each case. The difference between the two equations is the inclusion of gross assets as an explanatory variable in Equation 2 and debts as an explanatory variable in Equation 3. This is done to explore which of these two indicators seems to affect net assets most strongly and, also, to ascertain the extent to which net assets is influenced by debts.

The test of these two alternative approaches is based not only on the goodness of fit and the significance of the coefficients but also on the ability of each approach to estimate more closely the actual net assets of the sample families.

Another dimension to the analysis is provided by the availability of data for two periods--Year 1 and Year 5. As a result, estimates of these models can be made for each of the periods separately and, in addition, a further test can be made by seeing how these models estimate change between these two periods.

In each case we seek answers to the four questions raised in Section I on determinants of asset position, namely, whether a concept of normal income is more effective than reported income, the relevance of total debt, the effect of initial assets and the role of variables other than socioeconomic. Also, for the socioeconomic characteristics, does it make any difference if they relate to the wife or the husband? In the latter case, the test is made by using three alternative formulations of the socioeconomic characteristics, namely, only those of the wife, only those of the husband, and neither.

All parameters were estimated by ordinary least squares using linear forms, with the dollar variables (NA, GA, DT and IN) in arithmetic terms.*

V. Results

Parameter estimates obtained by applying to Year 1 data the foregoing models incorporating the alternative variations of the income and socioeconomic variables discussed earlier are presented in Table 5. For the socioeconomic set, three variations were tested, one containing variables reflecting only the characteristics of the husband, one with only the characteristics of the wife, and one with the characteristics of neither. The "normal" income of the family was estimated as a linear function of the age, education and occupation both of the wife and of the husband, of home ownership, and of occupation both of the wife and of the husband, of home ownership, and of savings attitudes of the couple; these were the variables felt most likely to reflect the longer run level of family income. Considering that this was the first year of marriage, and that many if not most of these couples had not yet had a chance to establish a clear career path, the validity

*Since there were an appreciable number of zero values, especially for Year 1, and since net assets were frequently negative, expressing these variables in logs was not feasible.

5. Estimates of Parameters of Assets Functions, Year 1^a

Variable ^b	Gross assets (GA)				Total debts (TD)		Net assets (NA)			
	1	2	3	4	1	2	1	2	3	4
1. Own home					0.15 ^Δ	--				
2. Expense plan	--	--	--	--	--	--	--	--	--	--
3. Ave. attitude	--	--	0.14 ^Δ	0.13 ^Δ	--	--	0.12 ^Δ	--	0.12 ^Δ	--
4. PFO (h)	-0.19*	-0.16 ^Δ	-0.17*	--	--	--	-0.15*	--	--	--
5. PFO (w)	--	--	--	--	--	--	--	--	--	--
6. Durables stock	--	--	--	--	--	--	--	--	--	--
7. Wife works	--	--	--	--	--	--	--	--	--	--
8. Age (h)	0.15 ^Δ									
9. Age (w)	--	--								
10. Education (h)	--	--								
11. Education (w)	--	--								
12. Prof.-mgr. (h)	--	--								
13. Clerical (h)	--	--								
14. Skilled (h)	--	--								
15. Semi-unskilled (h)	--	--								
16. Prof.-mgr. (w)	--	--								
17. Clerical (w)	--	--								
18. Labor (w)	--	--								
19. GA	--	--	--	--			-0.48**	0.83**	-0.50**	0.85**
20. TD	--	--	--	--						
21. Y	0.28**	0.32**	0.34**		--	--	0.29**	--	0.23**	--
22. Y _n				0.26**		--				
Adj. R ²	0.13**	0.08*	0.10**	0.08**	0.01	0.00	0.32**	0.72**	0.30**	0.71**

^aThe 0.01, 0.05, and 0.10 levels of significance are denoted by **, *, Δ respectively. Dashes represent non-significance at 0.10 level.

^b_h-husband, w-wife.

of these variables for this purpose is unclear, but are used anyway for later comparison. At the same time, since the socioeconomic characteristics are major components of the normal income estimate they are not used as separate variables in the functions including normal income.

To bring out more clearly the principal results, parameter estimates are given in Table 5 (as well as in later tables) only where they are significant at the .10 level or beyond. A variable that was included in a function and is not significant at that level is shown by a dash. A blank in a particular space means that the variable was not included in that function.

Looking at the results in Table 5, we find that the adequacy of the different models varies substantially both with the model and with the dependent variable. All of the gross assets functions explain approximately 10 percent of the variation in that variable, the total debt functions seem completely ineffective, while the net assets functions explain about 30 or 70 percent of the total variation, the latter when gross assets is included as an independent variable. With respect to the four questions raised initially on the importance of different factors influencing asset holdings, the normal income concept used seems to have about the same relevance as reported income in explaining asset holdings. It is highly significant in the gross assets function, is also significant in one of the net asset functions though it is not statistically significant at the .10 level in the total debt function. On the other hand, reported income is also statistically significant at the .01 level in the gross assets and net assets functions.

Total debt is not important in explaining gross assets, but does have a strongly negative significant influence on net assets. Although gross assets seems to be a more important influence on net assets than total debt, these results provide a clear indication that at least at the start of the marriage couples with large debt tend to have small net assets, and conversely. This is undoubtedly due to the need of many couples at the beginning of a marriage to borrow money to furnish living quarters and, occasionally, also to buy a house.

Other variables appear to be of lesser importance. Except for income, the socioeconomic variables seem to be of little importance. However, gross and net asset holdings seem to be affected positively by attitudes toward saving and negatively by the husband being the family financial officer.

It might be expected that fitting the same functions to data for Year 5 would yield better results than were obtained for Year 1, because after five years of marriage the couples would have had the time to better establish their life styles, so that patterns of asset accumulation and determinants of this accumulation would be more apparent. This is indeed the case, as is evident from Table 6, which presents data for Year 5 corresponding to those given for Year 1 in Table 5.

Perhaps the most obvious result is that except for some of the net assets functions, all the coefficients of determination for Year 5 are considerably higher than the corresponding figures for Year 1, and this time the debt functions are statistically significant, at the .01 level. For Year 5

6. Estimates of Parameters of Asset Functions, Year 5

Variable ^b	Gross assets (GA)				Total debts (TD)				Net assets (NA)			
	1	2	3	4	1	2	3	4	1	2	3	4
1. Own home	--	--	--	--	--	--	--	--	--	--	--	--
2. Expense plan	--	--	--	--	0.17*	0.16*	--	--	--	-0.09*	--	-0.08*
3. Ave. attitude	--	--	--	--	--	--	--	--	--	--	--	--
4. FFO (h)	--	--	--	--	--	--	--	--	--	--	--	--
5. FFO (w)	--	--	--	--	--	--	--	--	--	--	--	--
6. Durables stock	--	--	--	0.09 ^Δ	0.14 ^Δ	0.19*	0.13 ^Δ	--	0.15*	--	--	--
7. Wife works	--	--	--	--	-0.14 ^Δ	--	--	--	--	--	--	--
8. Age (h)	--	--	--	--	--	--	--	--	--	--	--	--
9. Age (w)	--	--	--	--	--	--	--	--	--	--	--	--
10. Education (h)	--	--	--	--	--	--	--	--	--	--	--	--
11. Education (w)	0.19 ^Δ	0.12 ^Δ	--	--	--	--	--	--	--	--	--	--
12. Prof.-mgr. (h)	--	--	--	--	--	--	--	--	--	--	--	--
13. Clerical (h)	--	--	--	--	--	--	--	--	--	--	--	--
14. Skilled (h)	--	--	--	--	--	--	--	--	--	--	--	--
15. Semi-unskilled (h)	--	--	--	--	--	--	--	--	--	--	--	--
16. Prof.-mgr. (w)	--	-0.12 ^Δ	--	--	--	--	--	--	--	--	--	--
17. Clerical (w)	--	--	--	--	--	--	--	--	--	--	--	--
18. Labor (w)	--	--	--	--	--	--	--	--	--	--	--	--
19. GA1	0.24**	0.27**	0.28**	0.29**	--	--	--	--	0.32**	0.08 ^Δ	0.32**	0.09*
20. TD1	--	--	--	--	--	--	--	--	--	0.88**	--	0.87**
21. NA1	--	--	--	--	--	--	--	--	--	--	--	--
22. GA5	0.58**	0.58**	0.59**	0.61**	--	--	--	--	--	--	--	--
23. TD5	--	0.11	0.12 ^Δ	--	0.39**	--	--	--	0.20*	-0.08 ^Δ	0.17*	--
24. Y5	--	--	--	--	--	--	--	--	--	--	--	--
25. Y5 _n	--	--	--	--	--	0.25**	--	--	--	--	--	--
Adj. R ²	0.59**	0.58**	0.58**	0.58**	0.17**	0.10**	0.23**	0.78**	0.21**	0.78**	0.21**	0.78**

^aThe 0.01, 0.05, and 0.10 levels of significance are denoted by **, *, Δ respectively. Dashes represent non-significance at 0.10 level.

^bh-husband, w-wife.

nearly 60 percent of the variation in gross assets holdings is explained by the various sets of independent variables. Total debt is now a highly significant explanatory variable. Both normal and reported income are separately also highly significant,*but neither is as important as total debt.

Either reported income or normal income is highly significant in accounting for variations in total debt. Also important in explaining total debt holdings are a detailed expense plan, and the stock of durables, both with expected positive signs, and wife not working. In other words, total debt tends to be higher if the family has a detailed expense plan, if the family has a large stock of durables and if the wife is not working.

The most important influence on net assets is seen to be the level of gross assets, as was the case in Table 5. Net assets in Year 1 is highly significant when the gross assets variable is not included, but is still statistically significant (but much less important) even with gross assets in the equation. Total debt is highly significant, as is reported income, though gross assets is clearly the dominant explanatory variable. Especially interesting is the fact that in Year 5 total debt and net assets are now positively correlated, suggesting that those who borrowed much money initially seem to have made good use of the funds.

Turning to the four questions asked initially about influencing variables, this time reported income seems more important than normal income. This is evident for all three types of assets. As in Year 1, total debt

*In addition to the variables included in the normal income specification mentioned earlier for Year 1, this estimation function for normal income in Year 5 included reported income in Year 1. Even so, the goodness of fit was not much better than for the Year 1 function.

is a major influence, this time for net assets as well as for gross assets with, as noted previously, the relationship with net assets being the opposite to that observed for Year 1. Bearing out the earlier observation that in the first few years of marriage the couples would be adjusting their life styles is the fact that the initial holdings of these assets or debts, while showing some positive relationship to the Year 5 holdings, do not seem anywhere near as important as other variables.

As in Year 1, the socioeconomic variables show only scattered influence. The principal such influence is the tendency for total debt to be less if the wife is working.

Unlike the results in Table 5, savings attitudes seems of little importance in explaining variations in these holdings, but stock of durables retains some importance, particularly for debt and net assets.

The results using the same models to explain changes in assets and debts from Year 1 to Year 5, in Table 7, show that these functions explain about half of the variation in the change in gross assets, about a fifth of the variation of the change in total debts, and either about 10% to 70% of the variation in the change in net assets, depending on the exclusion or inclusion of gross-assets change as an independent variable.

Essentially these results are not too different, in terms of significant variables, from those for Year 5 in Table 6. Thus, the principal explanatory variables for the change in gross assets is the change in total debt and the level of reported income. Reported income also enters into the explanation of change in total debt, and of change in net assets. In the

7. Estimates of Parameters of Change-in-Assets Functions^a

Variable ^b	ΔGA				ΔTD		ΔNA			
	1	2	3	4	1	2	1	2	3	4
1. Own home										
2. Expense plan	--	--	--	--	0.13 Δ	0.14 Δ	--	-0.10*	--	-0.10*
3. Ave. attitude	--	--	--	--	0.18*	0.18*	--	--	--	--
4. FFO (h)	--	--	--	-0.12 Δ	--	--	--	--	-0.16 Δ	--
5. FFO (w)	--	--	--	-0.11 Δ	--	-0.15 Δ	--	--	-0.15 Δ	--
6. Durable increase	0.12*	0.11 Δ	0.12 Δ	0.10 Δ	0.14 Δ	0.14 Δ	0.15 Δ	--	0.13 Δ	--
7. No. of credit cards	--	--	--	--	0.30**	0.34**	--	-0.13**	--	-0.12*
8. Wife works	--	--	--	--	-0.14 Δ	--	--	--	--	--
9. Age (h)	--	--	--	--	--	--	--	--	--	--
10. Age (w)	--	--	--	--	--	--	--	--	--	--
11. Edu. (h)	--	--	--	--	--	--	--	--	--	--
12. Edu. (w)	--	--	--	--	--	--	--	--	--	--
13. Prof.-mgr. (h)	0.22 Δ	--	--	--	--	--	--	--	--	--
14. Clerical (h)	--	--	--	--	--	--	--	--	--	--
15. Skilled (h)	--	--	--	--	--	--	--	--	--	--
16. Semi-unskilled (h)	--	--	--	--	--	--	--	--	--	--
17. Prof.-mgr. (w)	--	-0.17*	--	--	--	--	--	--	--	--
18. Clerical (w)	--	--	--	--	--	--	--	--	--	--
19. Labor (w)	--	--	--	--	--	--	--	--	--	--
20. ΔGA	--	--	--	--	--	--	0.91**	0.91**	--	0.91**
21. ΔTD	0.59**	0.58**	0.58**	0.62**	--	--	--	--	--	--
22. Y5	0.18**	0.18*	0.19**	--	0.23**	--	0.25**	--	--	--
23. Y5 _n	--	--	--	--	--	--	--	--	--	--
Adj. R ²	0.52**	0.51**	0.50**	0.49**	0.23**	0.20**	0.11**	0.75**	0.08**	0.75**

^aThe 0.01, 0.05, and 0.10 levels of significance are denoted by **, *, Δ respectively. Dashes represent non-significance at 0.10 level.

^bh-husband, w-wife.

latter case, change in gross assets is again by far the most important variable.

In terms of the questions about the four types of separate influences, once again it appears that reported income rather than the normal income concept used is the more relevant. In a sense, this is not surprising since even after five years, it is not clear whether normal income estimated on the basis of regressions between actual income and a set of socioeconomic characteristics is likely to be very "normal" from the point of view of reflecting saving behavior. There is no question that many of these couples were still getting adjusted (and a few getting divorced), so that not many of them are likely to have reached a level of equilibrium after five years to lend much validity to a measure of this type.

In terms of change, total debt now has no relationship to net assets, though it is, as might be expected, highly correlated with gross assets. Socioeconomic variables once more do not exhibit much importance except for the wife working, which tends to reduce the amount of debt. Other variables do appear to have some effect, especially ownership of credit cards (which tends to increase debt and to decrease the change in net assets), presence of a detailed expense plan (which also tends to raise the change in debt and lower the change in net assets), ownership of a house (which increases debt), and change in stock of durables (which tends to bring about changes in a similar direction for all three types of assets).

Is the direct or indirect approach better for explaining net assets? The answer from these data, using all three models, is provided in Table 8. This table provides estimates of the goodness of fit obtained

8. Goodness of Fit of Alternative Approaches to
Estimating Net Assets

<u>Period</u>	<u>Dependent variable</u>	<u>NA estimated as GA-TD</u>	<u>NA directly</u>	
			<u>(2) GA</u>	<u>(3) TD</u>
Year 1	NA	0.13**	0.73**	0.36**
Year 5	NA	0.21**	0.80**	0.27**
Year 1-5	Δ NA	0.08**	0.76**	0.16**

by the two different direct models (alternately excluding and including total debt in the net assets function) and for net assets estimated as a difference between estimated gross assets and total debt.

As is evident from this table, the direct approach seems to yield much better results, especially when gross assets is included in the net assets function. These results serve to confirm those evident from the preceding three tables, which brought out the importance of gross assets as an explanatory variable in the net assets function, and which demonstrated that this function had a much higher goodness of fit than any of the gross assets or total debt functions. In this case, in other words, disaggregation of net assets into its principal components is not likely to yield any improvement in explaining fluctuations in that variable.

VI. Conclusions

To come back to the questions raised at the beginning of the study, some fairly definitive answers are indicated by the foregoing results, at least as applied to this restricted data set. For one thing, the tables in Section III as well as the regression results suggest clearly that, at least in the first few years of the marriage, those who start out with more tend to maintain and, if anything, widen the margin. Not only are the autocorrelations between Year 1 and Year 5 for gross assets and net assets strongly positive but the dispersion of these asset distributions increases markedly over time.*

*For example, the inter-quartile range for net assets increased between Year 1 and Year 5 from \$2,100 to \$11,100; the corresponding figures for gross assets are \$2,400 and \$20,300.

Which variables differentiate between couples that improve their financial position in these first few years of marriage and those that do not? A strong base established by the time of marriage is an obvious answer, as suggested by the previous point. In addition, the results offer the intriguing suggestion that the couples best off financially after five years, both in terms of gross assets and of net assets, are those who are venture-some enough to acquire substantial amounts of debt. Thus, the primary determinant of the amount of gross assets after five years, as well as of the change in gross assets during the first years of marriage, is the amount and the change in total debt, respectively. In turn, the most important variable explaining the level of net assets after five years, as well as the change in net assets, is gross assets. For both types of functions, the influence of debt on gross assets, and of gross assets on net assets, is much greater than the autocorrelation of gross assets or net assets with themselves.

Unless it be inferred from these findings that the way for a young couple to get rich is to rush into debt, it should be stressed that the positive influence of debt might have been the result more of general economic conditions than of the financial accumen of these couples. This is because the principal form of debt was represented in this sample by purchase of a home. About 43% owned a home already at the time of marriage, and this percentage had increased to 82% after the first five years, a tendency not unusual in smaller cities like Peoria and Decatur. Since the period during which they were making these purchases, 1968-73, was characterized by continually rising prices for homes, the debt that these couples incurred to acquire homes was accompanied by continually rising equity that served

to raise the value of both their gross assets and net assets. Whether the same favorable conditions would hold at other times is much more problematical.

These results also suggest that a concept of normal income is not as useful for explaining differences in these holdings among different couples as is current reported income. This is not too surprising in view of the difficulty of imparting much meaning to "normal" or "permanent" income at this early stage of family formation. That these concepts may be more useful at a later stage is suggested by the fact that normal income seems to be more likely to be significant for the asset functions in the fifth year of marriage than in the first year.

With regard to socioeconomic variables other than income, it is rather surprising to note how infrequently such variables appear to show any significance. There is some indication that the presence of a working wife tends to be associated with a smaller volume of debt and that the husband being in a professional or managerial occupation is associated with more gross assets, while the reverse (oddly enough) is true if the wife is in a professional or managerial occupation. None of these variables are, however, strongly significant.

More noticeable is the influence of various other financial as well as some attitudinal variables on these asset holdings. Thus, a larger stock of durables is associated with more gross assets and more net assets after five years, even though the value of this stock does not enter into

these dependent variables.* A positive attitude toward savings also seems to contribute to more assets, especially at the start of the marriage, though this variable does not show up in the Year 5 functions, possibly because its effect has by then been absorbed by the financial variables. On the other hand, the presence of a detailed expense plan does not show up in the Year 1 function but shows up clearly in the Year 5 functions, acting to increase total debt and to depress net assets. Conceivably, such expense plans are developed only over time so that this type of question may not be too meaningful when asked at the very beginning of a marriage.

There is further some tendency for assets to be less if the family financial officer is either the husband or the wife rather than both jointly. The husband as the financial officer seems to have some influence toward decreasing the amount of assets, particularly so in Year 1.

In closing, it cannot be overemphasized that these results are based on a limited data set and should be treated only as suggestive for future work. Nevertheless, in view of the virtual absence of any studies of the asset accumulation practices of married couples in this very early stage of family formation, these results should provide a basis for more intensive study in the future of this key segment of the population.

*In a sense, however, these durable stocks do enter indirectly, to the extent that purchasers of a home are likely to also buy more durables to equip that home.

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